

IN THE CLAIMS:

1. An apparatus for the purification of water comprising:

a non-solid vessel 3 having a bottom defining an opening, the vessel 3 capable of
5 being partially submerged below the surface 13 of a body of water;

a pan 5 located within the vessel 3, the pan 5 being flexibly connected to the inner
wall 19 of the vessel 3 and being located beneath the surface 13 of the water;

a lens 1 fixably connected to the top of the vessel 3, wherein the lens 1 is focused
beneath the surface 13 of the water and above the surface of the pan 5.

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2. The apparatus of claim 1, wherein the non-solid vessel 3 has an inner wall
19 and an outer wall 20.

3. The apparatus of claim 1, wherein a grill 10 is attached to the opening of
15 the bottom of the non-solid vessel 3.

4. An apparatus for the desalination or purification of water comprising:

a non-solid vessel 3 having a bottom defining an opening, the vessel 3 capable of
being partially submerged below the surface 13 of a body of water;

20 a pan 5 located within the vessel 3, the pan 5 being flexibly connected to the inner
wall 19 of the vessel 3 and being located beneath the surface 13 of the water;

a lens 1 fixably connected to the top of the vessel 3, wherein the lens 1 is focused
beneath the surface 13 of the water and above the surface 13 of the pan 5;

25 means for varying the orientation of the vessel 3 in accordance with the location
of the sun; and

means for condensing steam generated in the non-solid vessel 3, whereby steam
generated in the non-solid vessel 3 is condensed outside of the non-solid vessel 3.

5. The apparatus for the desalination of water of claim 4, wherein the means
30 for varying the orientation of the vessel 3 includes a sensing array 2, and electrical
controller, and a series of trim tanks 4 around the outer periphery of the non-solid vessel

3.

6. The apparatus for the desalination of water of claim 4, wherein the means for varying the orientation of the vessel 3 includes a sensing array 2, an electrical controller, and a gimbal joint.

7. The apparatus for the desalination of water of claim 4, wherein the means for condensing steam is a condensation coil 8 connected to the outer wall 20 of vessel 3 by piping 15.

8. The apparatus for the desalination of water of claim 4 further comprising a turbine 7 connected to the vessel 3 for generating electricity.

9. The apparatus of claim 4 further comprising a grill 10 fixably connected to the bottom of the vessel 3.

10. The apparatus of claim 4 further comprising a pump 9 fixably connected to the condensation coil 8.

11. The apparatus of claim 4, further comprising an anchor 12 fixably connected to the bottom of the vessel 3.

12. The apparatus of claim 4, further comprising an exhaust turbine 7 connected to pressure valve 6.

13. A method for the desalination or purification of water using sunlight, the method comprising the steps of:

containing a body of water within a vessel 3, the vessel 3 having a lens 1 fixably attached at the top and a bottom defining an opening,

5 locating a pan 5 just below the surface of the water,
focusing the lens 1 just beneath the surface 13 of the water and just above the bottom surface of the pan 5;
condensing water vapor outside of the vessel 3;
re-filling the vessel 3 with water as the water is converted to steam; and
10 periodically re-orienting the vessel 3 in a manner that tracks that movement of the sun.

14. The method of claim 10 further comprising generating electricity using the water vapor generated.

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15. The method of claim 10 further comprising pumping the purified water to a water storage container.